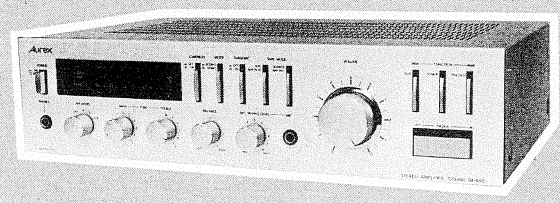
SERVICE DATA
FILE-NO. 170 - 112

TOSHIBA

STEREO AMPLIFIER

SB-A60



SPECIFICATIONS

General	
Power Supply:	220V ∿ 50 Hz for Europe 240V ∿ 50 Hz for United Kingdom & Australia 120V ∿ 60 Hz for U.S.A. and Canada
Power Consumption:	340W
Weight:	6.6 kg
Dimensions (W x H x D):	420 x 110 x 285 (mm)
Amplifier	
Continuous Power Output	
20 Hz ∿ 20 kHz both ch. driven:	42W x 2 (4 Ω), 40W x 2 (8 Ω)
1 kHz both ch. driven:	44W x 2 (4 Ω), 42W x 2 (8 Ω)
Total Harmonic Distortion:	0.08% (at rated power 8 Ω)
Frequency Response:	5 Hz ∿ 100 kHz (+0 dB, −3 dB)
Power Band Width (IHF):	10 Hz ∿ 35 kHz
S/N (IHF A Network):	95 dB (TUNER/AUX) 75 dB (PHONO)
Input Sensitivity/ Impedance:	PHONO 2.5mV/47 K Ω TUNER 150 mV/47 K Ω AUX/TAPE 150 mV/47 K Ω MIC 0.9mV/47 K Ω
Output Level:	TAPE REC 150mV
Tone Control:	BASS (at 100 Hz) ±8 dB TREBLE (at 10 kHz) ±8 dB
Frequency Response:	PHONO 20 Hz ∿ 20 kHz ±0.5 dB (RIAA equalization)
Phono Overload Level:	150 mV (RMS)

Specifications and design are subject to change without notice.

TE, TU, AY, TA, TC

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1. OPERATING CONTROLS

(The photograph are ones of SB-A60 European model)

(5) Subsonic Filter
Turn this switch ON to eliminate low frequency noise generated mainly by record warp.

(4) Mode Select Switch
Selects the stereo or monaural mode.

(3) Loudness
Turn this switch ON when listening at low volume levels to emphasize the low frequency.

(2) Power Indicator
A row of LEDs is used to indicate the average signal level output, with the number of LEDs verying with the changes in output. Output indicated for an 8 ohms speaker load.

(1) Power Switch
Press to turn the set ON. When the set comes ON, the left LED of the power indicator (2) will light.

(10) Phones
Connect the headphone plug to this jack.

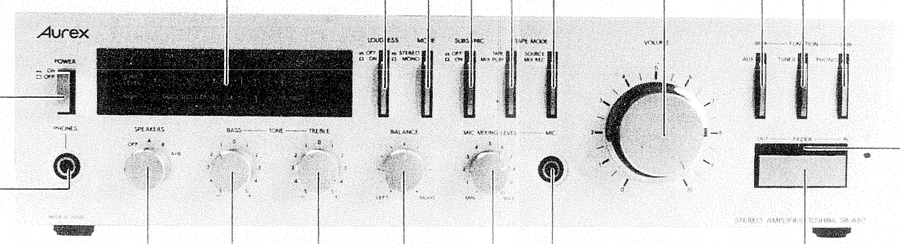
(11) Speaker Switch
This switch is connected to the rear panel speaker terminals.

A position:	Sound output from the speaker system connected to the A terminal.
B position:	Sound output from the speaker system connected to the B terminal.
A + B position:	Sound output from the combined speaker system connected to the A and B terminals.

When the speaker is connected to only A or B (but not both) the A + B position will not produce sound.

(12) (13) Bass and Treble Controls
Turn the bass or treble tone control clockwise from the centre zero (flat) position to emphasize bass or treble tones. Turn counterclockwise to decrease bass or treble tones.

(14) Balance
This control is used to adjust volume balance between the left and right speakers.



FRONT VIEW

Figure 1

(6) (7) Tape Mode
When playing a component connected to PHONO (turntable) TUNER (AM/FM stereo tuner), or AUX (any other component) place this switch to the SOURCE position. When a tape deck is connected ahd it is played, set to TAPE. In the TAPE position the red indicator above the switch will light. In the SOURCE position the green indicator above the switch will light.

- Do not change from Source to Tape while recording because this will interrupt the source input.

(8) Volume
Use this control to adjust the volume level.

(9) Function
This switch selects the desired program source.

AUX	for use with any audio component
PHONO	for record player or turntable
TUNER	for AM/FM stereo tuner

The function switch will not lock. Press it gently but firmly.

(18) Fader Indicator
These indicators come on and off when the fader switch (17) is operated. During fade out, the red (out) indicator comes on, and during fade in (at normal sound level) the green (in) indicator comes on.

(17) Fader
This rocker switch is used to temporarily reduce volume; when you want to mute stylus contact noise while cueing, for example. To fade out, press the left side of the switch. Press the right side to bring the volume level back up to the normal setting. Volume is attenuated by about 40 dB during fade-out. Therefore, if the volume control is turned up during fade-out, some sound will still be audible.

(16) Mic Jack
When using the microphone, insert the plug into this jack.

(15) Mic Mixing Level
This knob adjusts the output level from the microphone. When mixing sound from the mic with sound from AUX, PHONO or TUNER, the mic volume can be adjusted independently of the main volume control. When not using the mic, always turn this control to the MIN position and remove the plug from the jack (16).

(The photograph is ones of SB-A60, European Model)

REAR VIEW

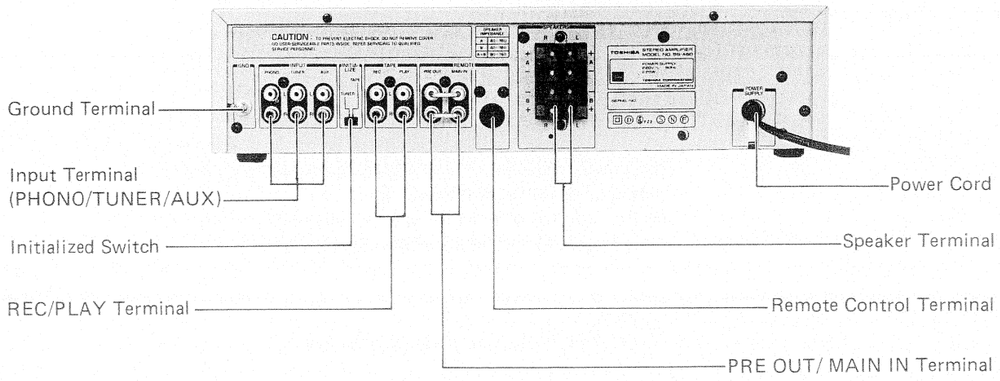
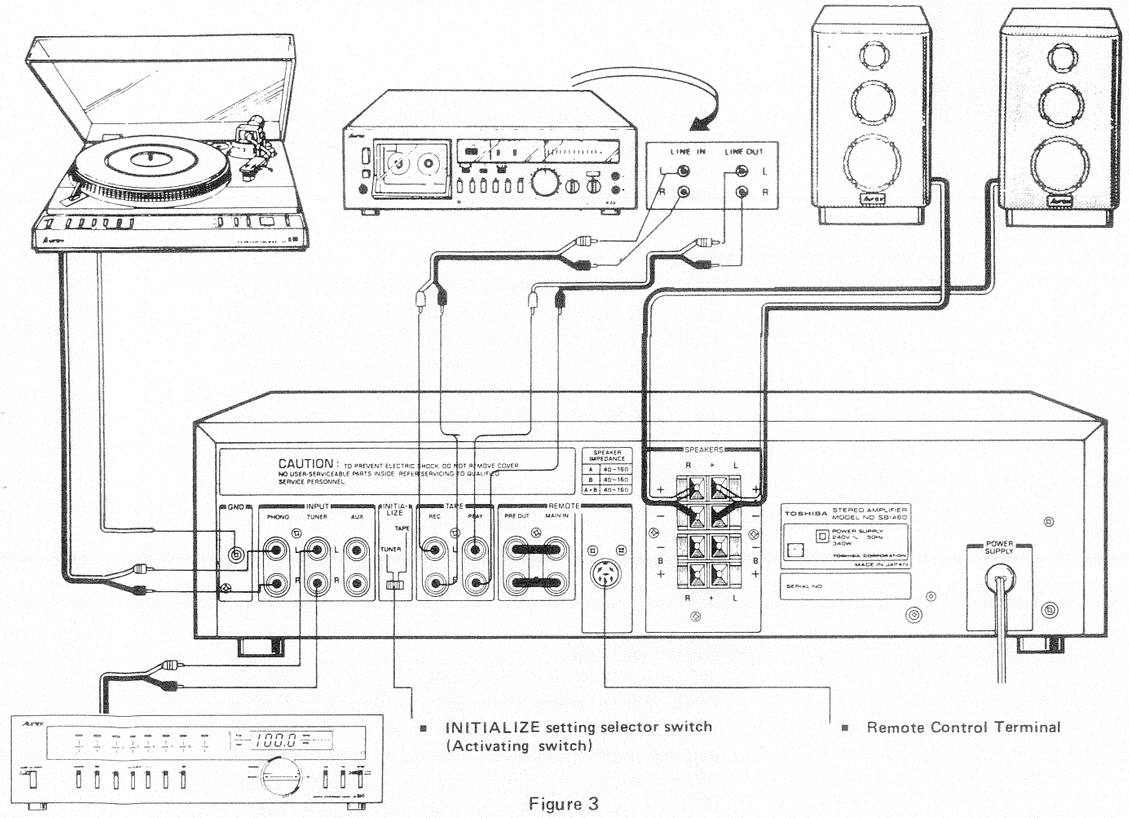


Figure 2

2. SYSTEM CONNECTIONS



■ INITIALIZE setting selector switch (Activating switch)

■ Remote Control Terminal

Figure 3

3. OPERATION

Note: Until all connections have been properly completed, do not plug the unit into the power supply receptacle or turn on the power switch.

Initialize setting selector switch — The initialize switch functions to automatically place the set to either the TUNER or TAPE position each time the Power switch (1) is few seconds of being turned OFF, the switch will not place the set in either position. Wait a moment before turning the set back on.

Remote Control Terminal — Use for a remote control unit.

■ **Connection of speakers to the power amplifier**

Connect the right speaker cord to the "R" terminal (speaker) and the left speaker to the "L" terminal (speaker) on the rear panel of the amplifier. Make sure the positive (+) cord is connected to the (+) terminal and the negative (—) cord to the (—) terminal. Crossing these cords will cause loss of stereo output.

* Make absolutely certain the power switch of the amp is OFF when this connection is made.
* Do not short-circuit the positive and negative speaker connection.

Note: Use speakers with an impedance of at least 4 ohms (preferably 8 ohms) to avoid overloading the amplifier.

■ **Confirm that the front panel controls are in the following positions before the power is turned on.**

1. Volume control all the way to the left (minimum).
2. Mic mixing level to the MIN position.
3. Tape mode switch in the SOURCE position.
4. Balance in centre position.
5. Tone controls (BASS, TREBLE) in centre zero position.

■ **Using a turntable**

Connect the output cables from the turntable to the PHONO terminals of the amplifier. If the turntable is equipped with a ground wire, or the instruction manual recommends the use of one, be sure to connect it to the GND terminal of the amplifier. Failure to do this may result in hum or howling noise.

■ **AM/FM broadcasts**

Connect the tuner output cables to the TUNER input terminals on the rear panel of the amplifier. No ground between the tuner and amp is necessary.

■ **Component connected to AUX**

Depress the AUX function switch, and operate the component in accordance with its instruction manual. Adjust volume and tone as desired.

■ **Using a tape deck**

Connect the tape deck input terminals (LINE IN) to the amplifier record terminals (REC), and the tape deck output terminals (LINE OUT) to the amplifier playback (PLAY) terminals.

1. To record on tape

Prepare the program source (turnable, tuner, etc.) to be recorded, and set up the tape deck to record following the tape deck instruction manual. Note that while recording, the amplifier volume and tone controls will have no effect on the recording level or tone.

2. To playback tapes

Place the tape mode switch to the TAPE position, and follow the instructions for tape playback in the tape deck instruction manual.

■ **Mic mixing and mixing recording**

This set is designed to permit direct mic mixing with tuner, turntable, or other audio source, and mic mixing recording.

Note: Always remember to turn the mic volume level to the MIN position before unplugging the microphone.

1. Mic mixing

Insert the microphone plug into the mic jack (16) and prepare the source for play. For mic mixing with records, place the Function switch (9) to the PHONO position, or if using a tuner or a component connected to the AUX terminal, place this switch on TUNER or AUX. Depress "SOURCE" MIX REC. With the controls thus set, turn Volume (8) to the proper level, then turn the Mic mixing level (15) to the right until the mic volume is balanced with that of the source. For mic mixing with tapes, depress the "TAPE" MIX PLAY button, then the procedure is the same as noted above.

2. Mic mixing recording

The mic mixing described in the procedure above using a source connected to PHONO, TUNER or AUX may be recorded by the tape deck by merely operating the tape deck in the recording mode. Mic mixing using a tape deck as a source cannot be recorded onto another tape.

4. DISASSEMBLY INSTRUCTIONS

(The photographs are ones of SB-A60, European Model)

REMOVAL OF TOP COVER

1. Remove four screws (A) (3ϕ x 8mm) from each side of the top cover.
2. Remove two screws (B) (3ϕ x 6mm) from back side of top cover. Then, top cover can be removed from the unit as shown in Figures 4 and 5.

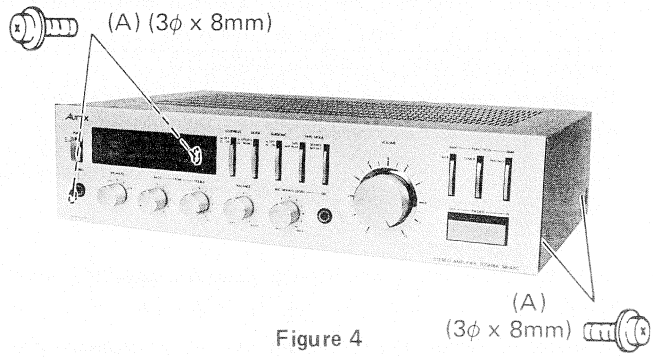


Figure 4

REMOVAL OF BOTTOM PLATE

1. Remove two screws (C) (3ϕ x 10mm) holding bottom plate as shown in Figure 6.
2. Remove four screws (D) (3ϕ x 12mm) holding the legs. Then, bottom plate can be removed from the unit and P.C. Board can be checked easily as shown in Figure 7.

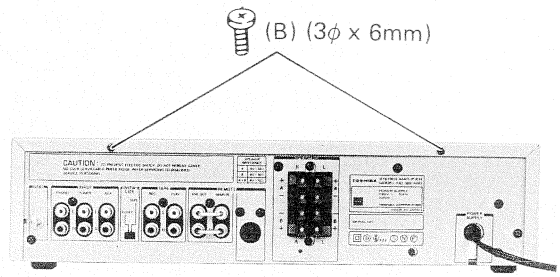


Figure 5

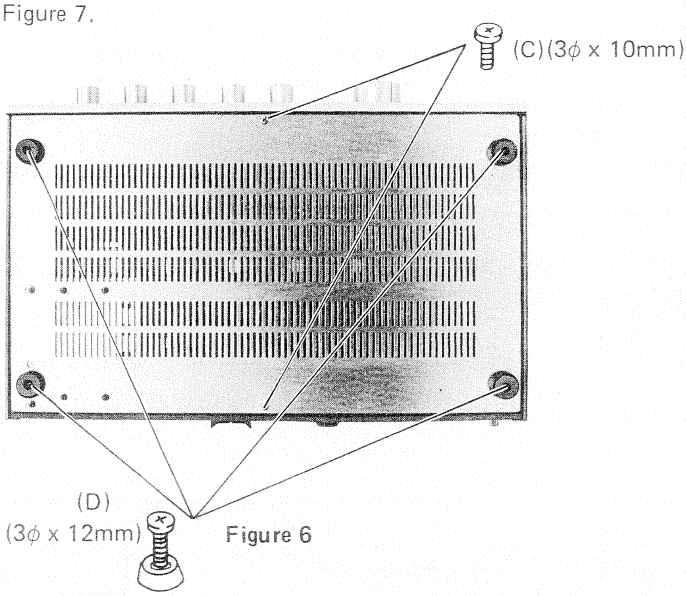


Figure 6

REMOVAL OF FRONT PANEL

1. Remove six knobs (G) as shown in Figure 7.
2. Remove hex nuts holding volume ring in volume knobs.
3. Remove four screws (H) (3ϕ x 8mm) of side panel plate holding side plate as shown in Figures 8 and 9.
4. Remove P.C. Board and other installated panels. Then, panel can be removed from the unit.

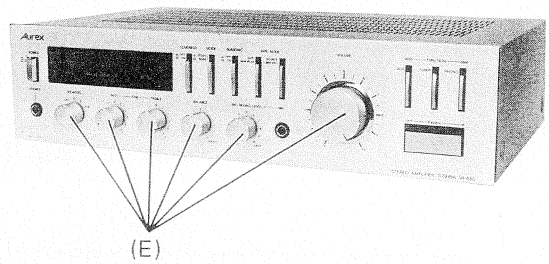


Figure 7

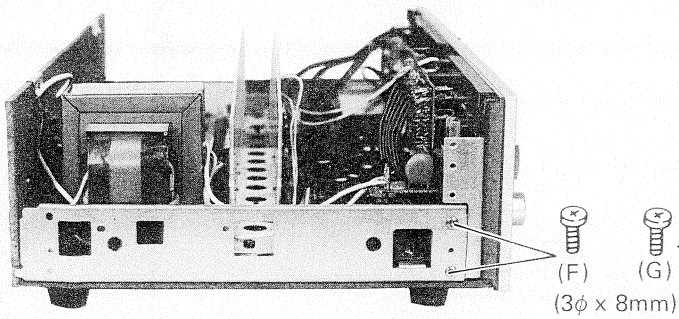


Figure 8

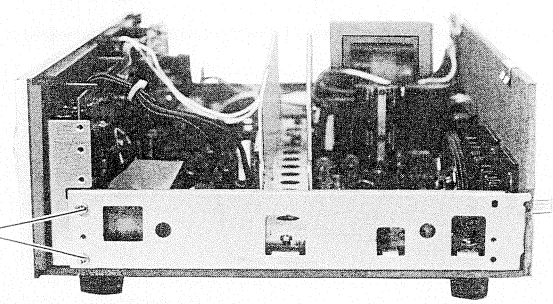


Figure 9

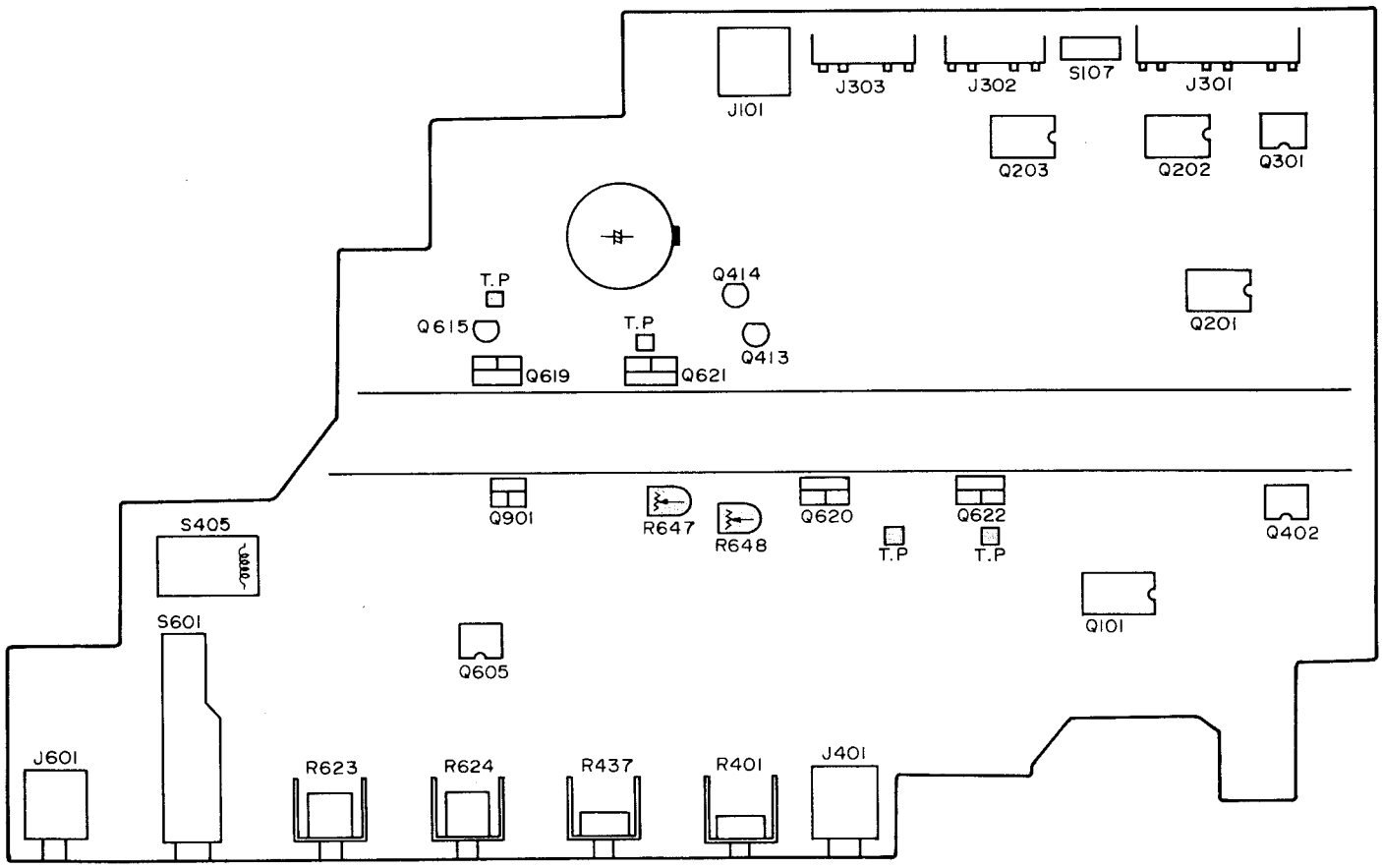
5. ADJUSTMENTS

IDLE CURRENT ADJUSTMENT

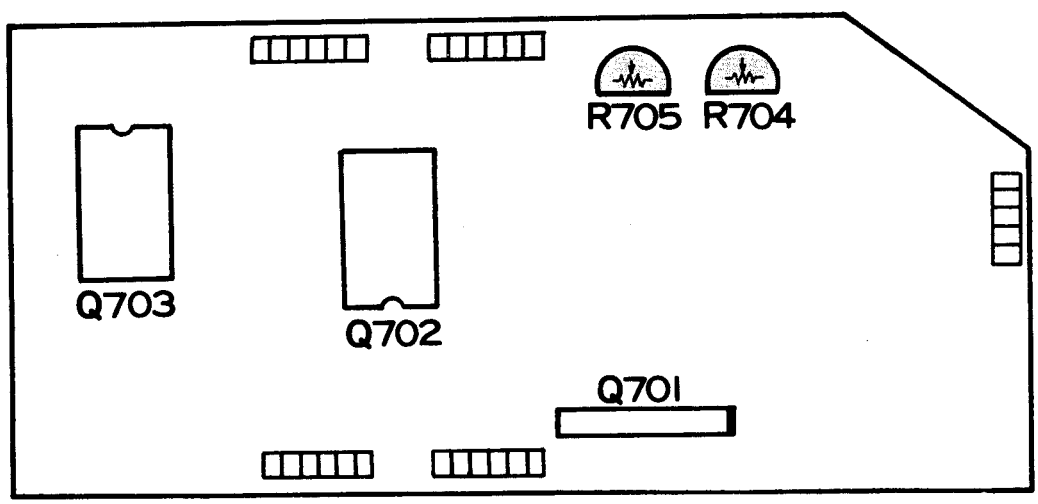
1. Idle current adjustment can easily be done by setting the semi-fixed VR R647, R648 (300 ohm) to mechanical mid point VR as shown in Figure 10.
2. The idle current between TP and TP must be less than 4mA when power has been on for 30 seconds.

LED LEVEL ADJUSTMENT

1. Right and Left channel can be varied. Adjust semi-fixed VR R704, 705 (1K ohm) so that the LED lighting level of right channel is equal to that of left channel.



MAIN P.C.Board



METER P.C.Board

Figure 10

6. BLOCK DIAGRAM

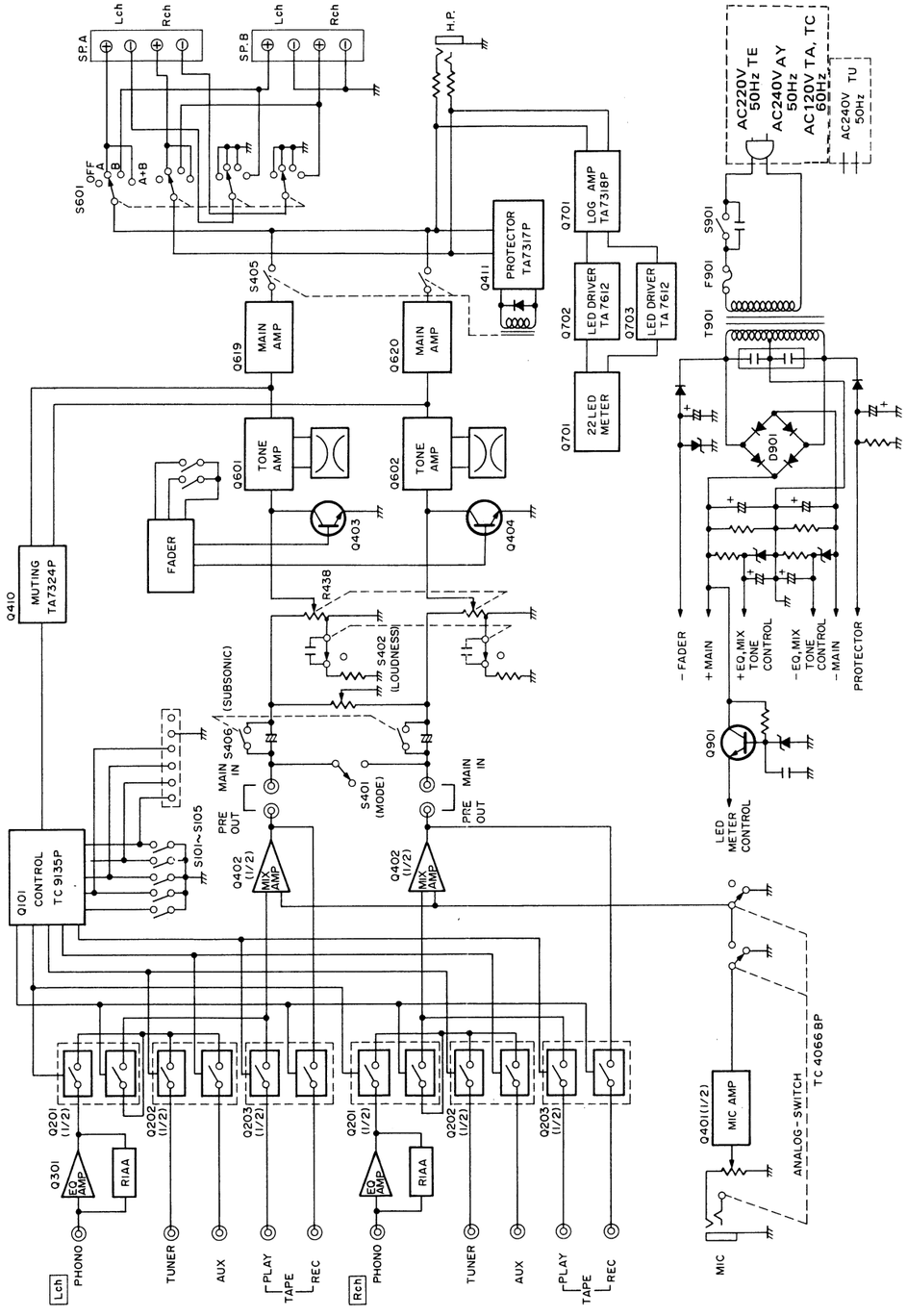
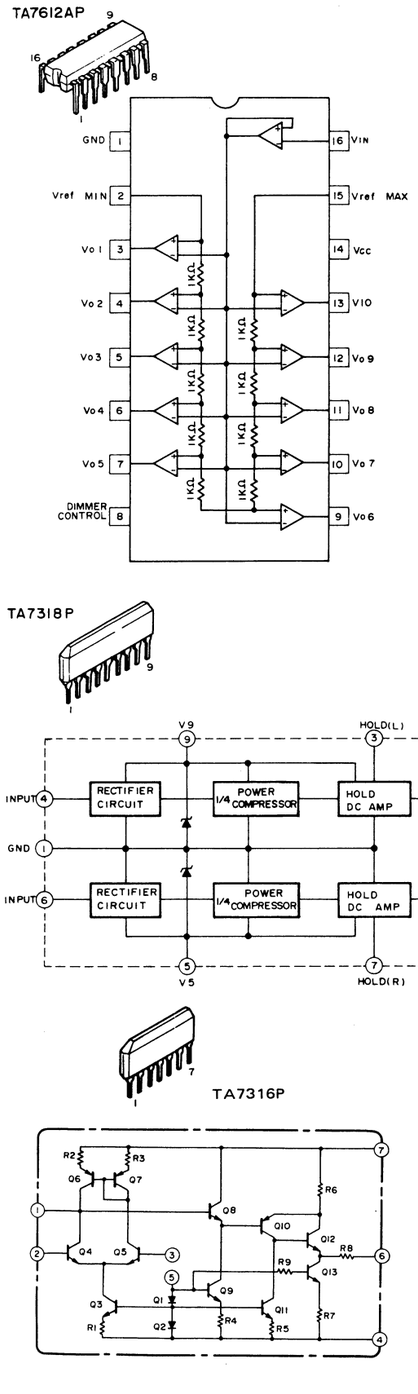


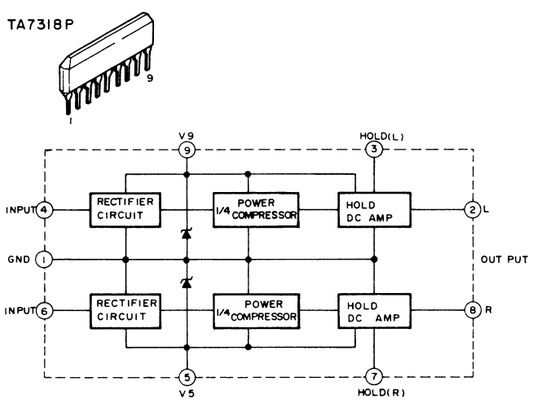
Figure 11

7. IC BLOCK DIAGRAM

TA7612AP

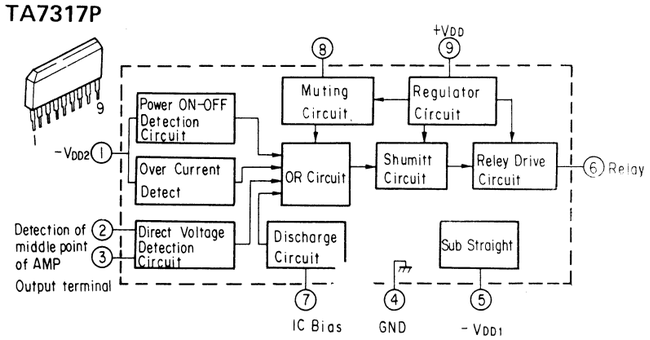


TA7318P

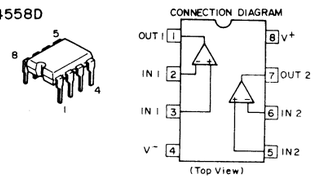


TA7316P

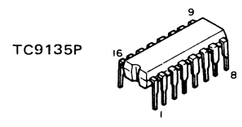
TA7317P



NJM4558D



TC9135P



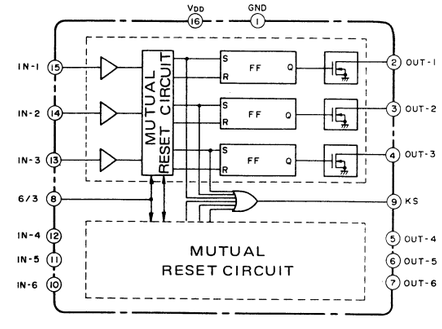
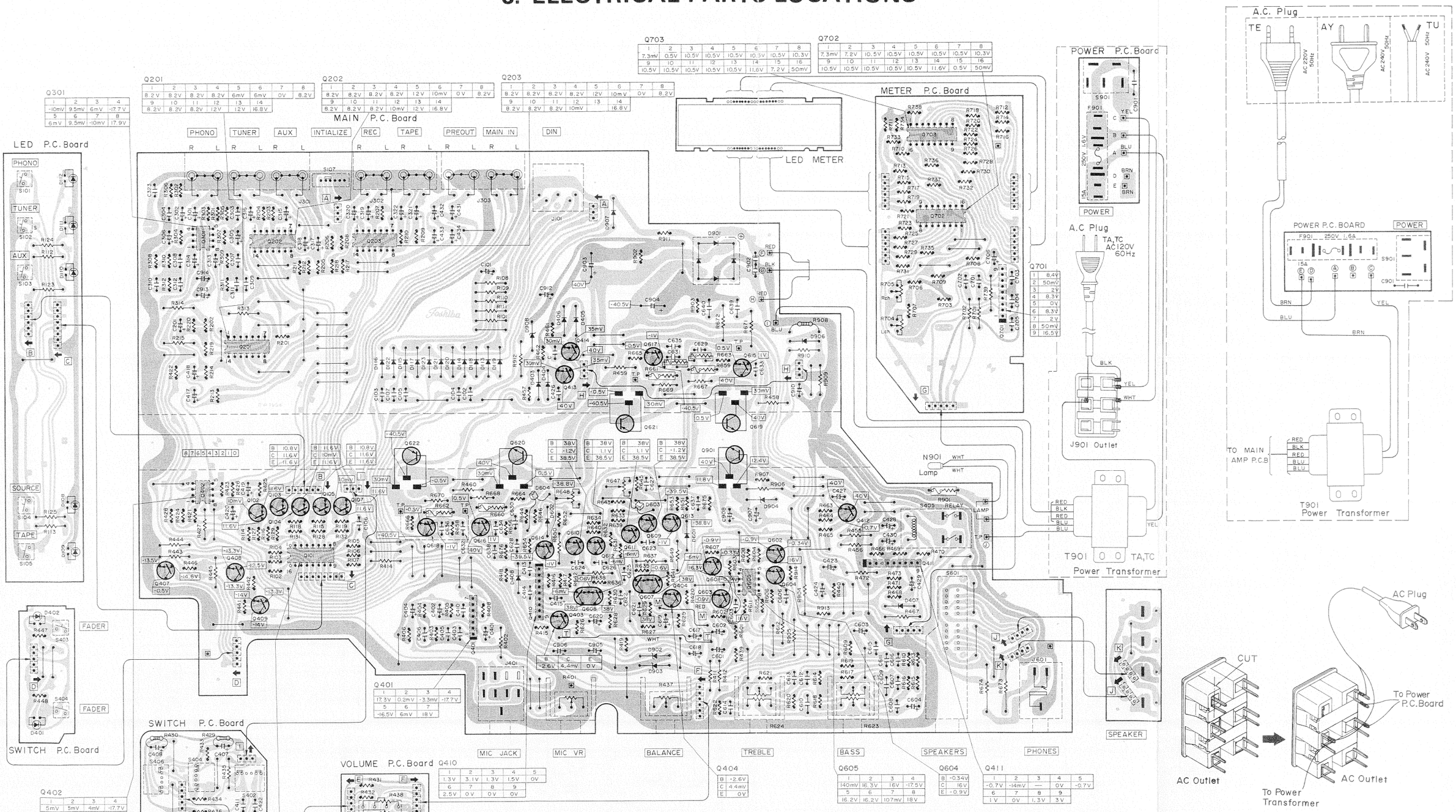


Figure 12

8. ELECTRICAL PARTS LOCATIONS



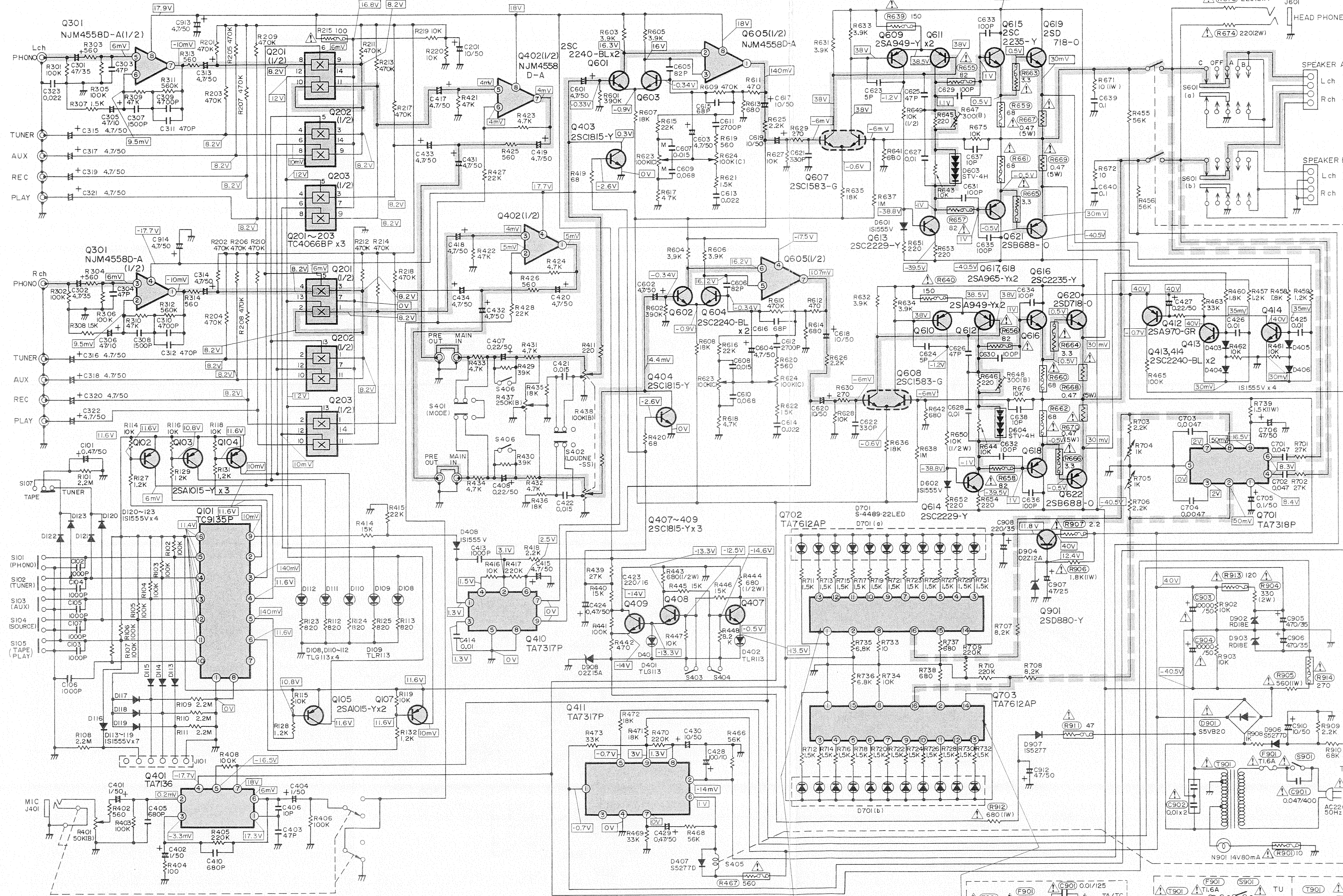
CAUTION
When changing AC Outlet, cut AC outlet to be satisfied with the safety standards.

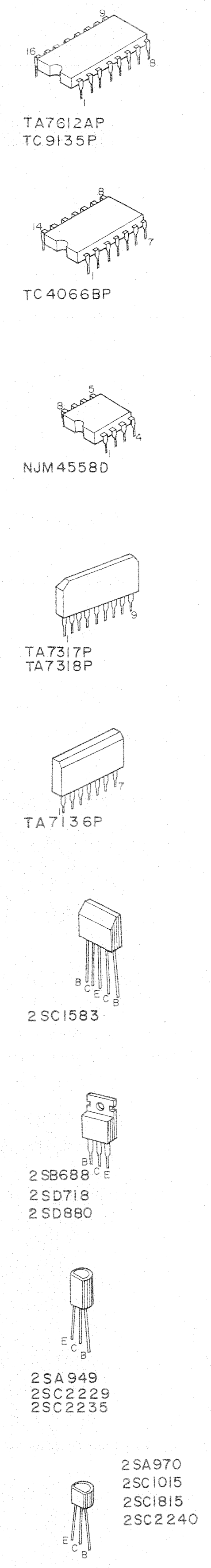
Figure 13

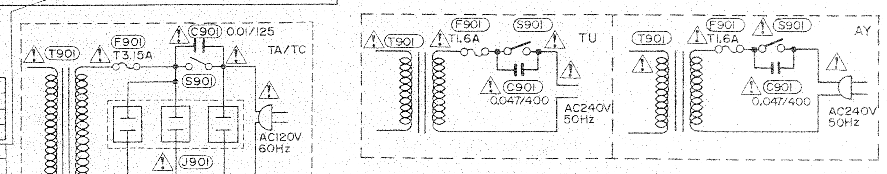
CAUTION:

The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

9. SCHEMATIC DIAGRAM







SWITCH

1. S101,102,103 : FUNCTION Switch ------ TUNER Position
   PHONO / TUNER / AUX
2. S104,105 : TAPE MODE Switch ------ SOURCE Position
   TAPE / SOURCE
3. S107 : INITIALIZE Switch -------- TUNER Position
   TUNER / TAPE
4. S401 : MODE Switch ----------- STEREO Position
5. S402 : LOUDNESS Switch --- OFF Position
6. S403,404 : FADER Switch ----- IN Position
7. S405 : RELAY
8. S406 : SUBSONIC Switch --- ON Position
9. S601 : SPEAKER Switch --- OFF Position
10. S901 : POWER Switch ------ OFF Position

Lch Signal Path
Lch L.E.D Level Signal Path
Rch Signal Path
Rch L.E.D Level Signal Path

Q702

1	2	3	4	5	6	7	8
7.3mV	7.2V	10.5V	10.5V	10.5V	10.5V	10.5V	10.3V
9	10	11	12	13	14	15	16
10.5V	10.5V	10.5V	10.5V	10.5V	11.6V	0.5V	50mV

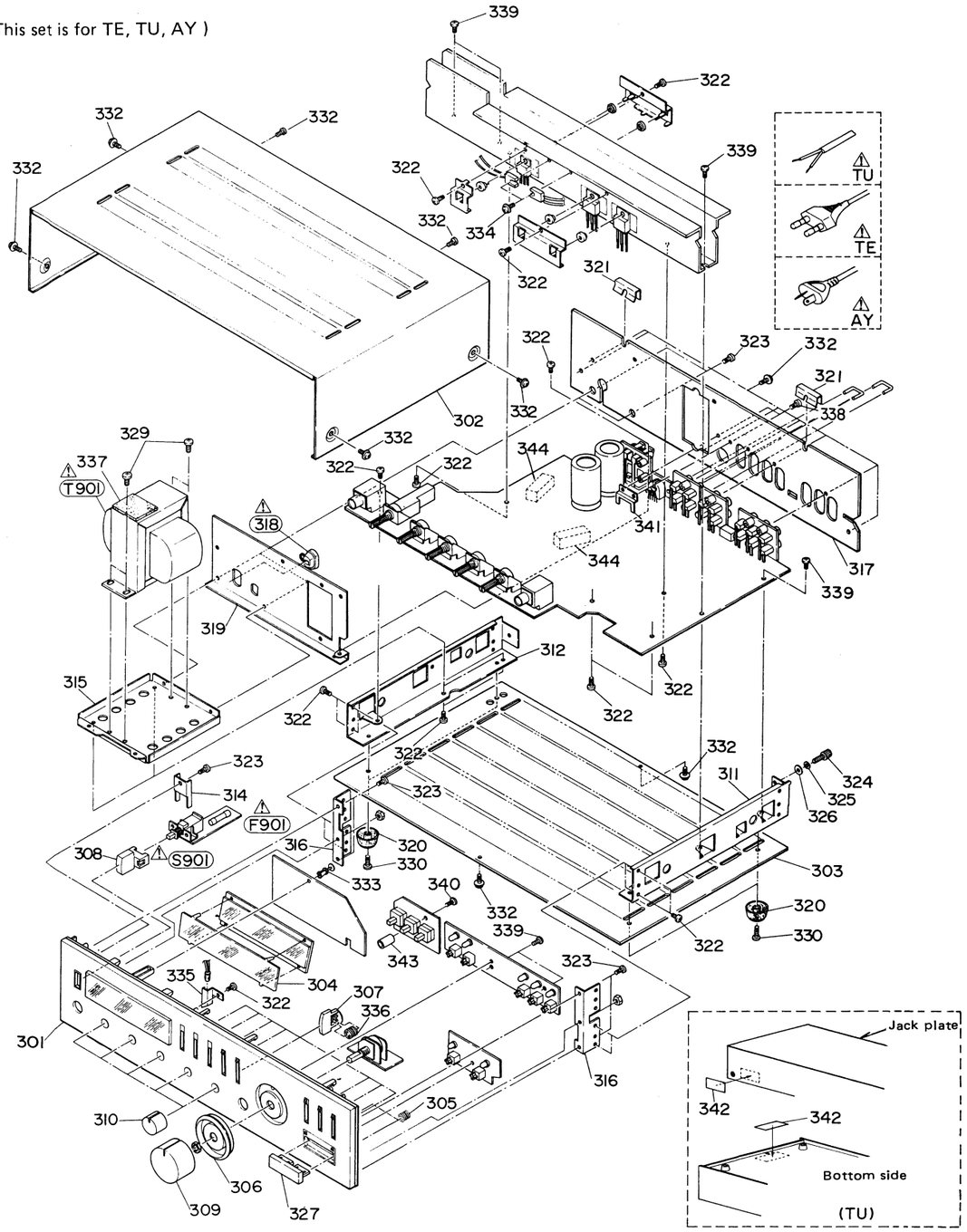
Q703

1	2	3	4	5	6	7	8
7.3mV	0.5V	10.5V	10.5V	10.5V	10.5V	10.5V	10.3V
9	10	11	12	13	14	15	16
10.5V	10.5V	10.5V	10.5V	10.5V	11.6V	7.2V	50mV

Figure 14

10. CABINET PARTS LOCATIONS

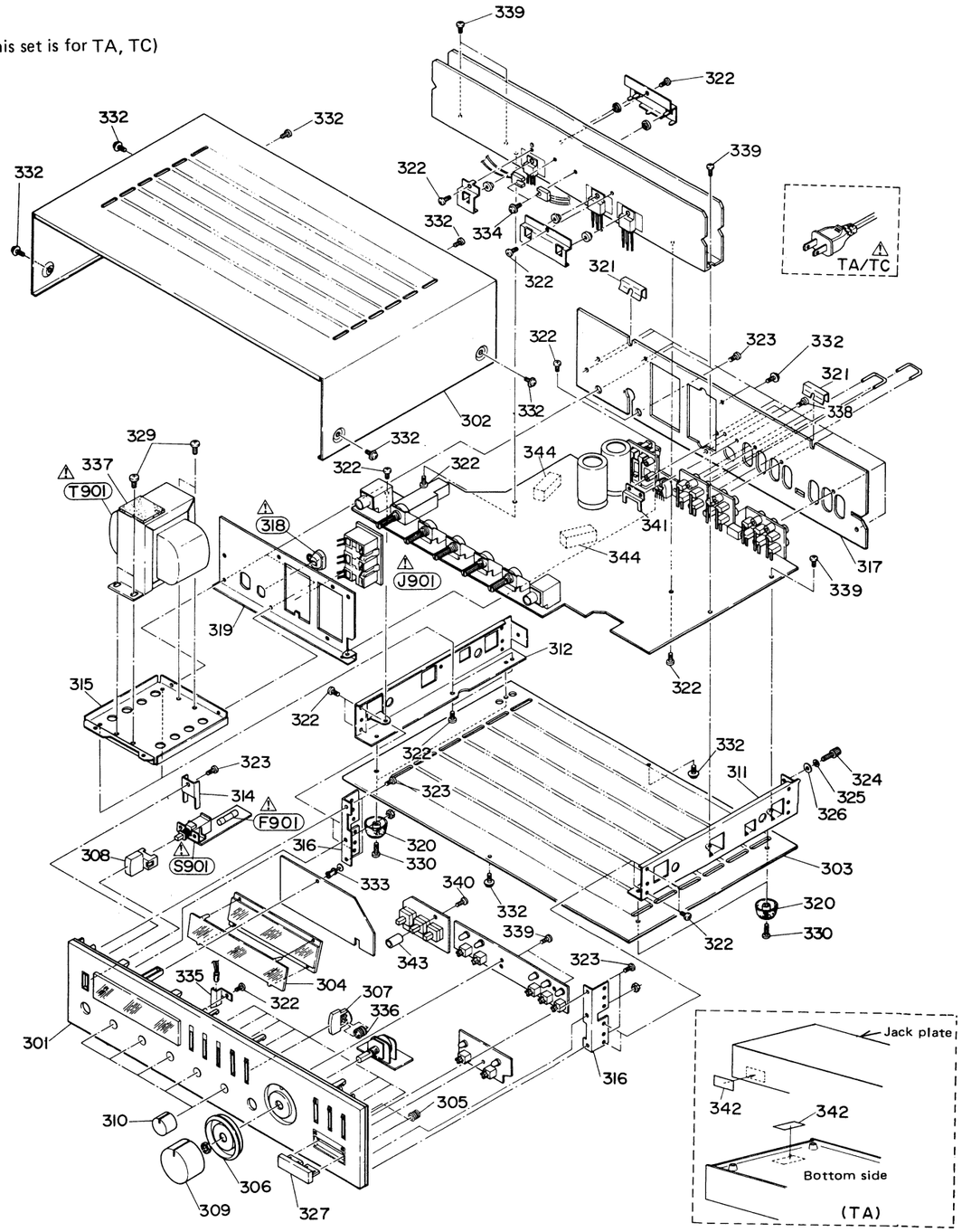
(This set is for TE, TU, AY)



NOTE: Parts excluded in the Parts List are not available as replacement parts.

Figure 15

(This set is for TA, TC)



NOTE: Parts excluded in the Parts List are not available as replacement parts.

Figure 16

11. PARTS LIST

CAUTION: The ⚠ Mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
		CABINET PARTS
301	22821575	Panel, Ass'y (TE, TU, AY)
301	22821574	Panel Ass'y (TA)
301	22821587	Panel Ass'y (TC)
302	22841268	Cover, Top (TE, TU, AY)
302	22841265	Cover, Top (TA,TC)
304	22836387	Plate, Dial Meter
305	25772559	Spring, Push
306	22833473	Ring, Volume
307	22884042	Knob, Function
308	22824355	Knob, Power
309	22826318	Knob, Volume
310	22826319	Knob, Tone
317	22852224	Plate, Jack (TE)
317	22852236	Plate, Jack (TU, AY)
317	22852223	Plate, Jack (TA)
317	22852235	Plate, Jack (TC)
⚠ 318	22845528	Bush, Cord (TE, TU, AY)
⚠ 318	25845120	Bush, Cord (TA, TC)
320	22874069	Leg
322	22701326	Screw (BID), 3ϕ x 8mm, Tapping
323	22707165	Screw (BID), 3ϕ x 10mm, Tapping
324	20794122	Screw
325	22703269	Washer, 3ϕ
326	22703189	Washer
327	22884017	Knob, Fader
329	22707185	Screw (FTBID), 4ϕ x 8mm
331	22707380	Screw (TPAN) 3ϕ x 10mm
332	22707522	Screw (FLDT) 3ϕ x 6mm
333	22705022	Rivet, Plastic, 3ϕ x 5.5mm
334	22701434	Screw (TPAN), 3ϕ x 10mm
336	25777021	Spring, Push
338	22707456	Screw, (FLDT), 3ϕ x 8mm
339	22707115	Screw (BID), 3ϕ x 8mm, Tapping
342	22950884	Label, Caution (TA,TU)
343	22758288	Spacer
		TRANSISTORS, IC'S AND DIODES
Q101		IC, TC9135P
Q102, 103		Transistor, 2SA1015-Y
104, 105		
107		
Q201, 202		IC, TC4066BP
203		
Q301	22114470	IC, NJM4558D-A
Q401		IC, TA7136P

Symbol No.	Part No.	Description
Q402	22114470	IC, NJM4558D-A
Q403, 404		Transistor, 2SC1815-GR
407, 408		
409		
Q410		IC, TA7324P
Q411		IC, TA7317P
Q412		Transistor, 2SA970-GR
Q413, 414		Transistor, 2SC2240-BL
Q601, 602		Transistor, 2SC2240-BL
603, 604		
Q605	22114470	IC, NJM4558D-A
Q607, 608	22114467	Transistor, 2SC1583-G
Q609, 610		Transistor, 2SA949-Y
611, 612		
Q613, 614		Transistor, 2SC2229-Y
Q615, 616		Tarnsistor, 2SC2235-Y
Q617, 618		Transistor, 2SA965-Y
Q619, 620		Transistor, 2SD718-O
Q621, 622		Transistor, 2SB688-O
Q701		IC, TA7318P
Q702, 703		IC, TA7612AP
Q901		Transistor, 2SD880-Y
D108, 110		Diode, TLG113
111, 112		
D109		Diode, TLR113
D113, 114		Diode, 1S1555V
115, 116		
117, 118		
119, 120		
121, 122		
123		
D401		Diode, TLG113
D402		Diode, TLR113
D403, 404		Diode, 1S1553V
405, 406		
D407		Diode, S5277D
D408		Diode, 1S1555V
D601, 602		Diode, 1S1555V
D603, 604	22115424	Diode, STV-4H
D701		Diode, S-4489
⚠ D901	22115397	Diode, S5VB20
D902, 903	22115370	Diode, RD18E
D904		Diode, 02Z12A
D906, 907		Diode, S5277D
D908		Diode, 02Z15A

Symbol No.	Part No.	Description
		ELECTRICAL PARTS
⚠ T901	22223862	Transformer, Power (TE)
⚠ T901	22223905	Transformer, Power (TU)
⚠ T901	22223906	Transformer, Power (AY)
⚠ T901	22223863	Transformer, Power (TA, TC)
S101	22195461	Switch, Key, PHONO
S102		TUNER
S103		AUX
S104		SOURCE
S105		TAPE PLAY
S107	22195355	Switch, Slide, TAPE/TUNER
S401	22195606	Switch, Push, MODE
S402		LOUDNESS
S403	22195461	Switch, Key, FADER OUT
S404		FADER IN
S405	22148667	Relay
S406	22195606	Switch, Push, SUBSONIC
S601	22195728	Switch, Rotary
⚠ S901	22195729	Switch, Push, Power
J101	22167911	DIN Socket
J301	22163758	Jack, US6P
J302, 303	22163759	Jack, US4P
J401	22163744	Jack, Microphone
J601	22163776	Jack, Headphone
⚠ J901	22167847	Outlet, 3P (TA, TC)
⚠ F901	22144293	Fuse, T 1.6A/250V (TE, TU, AY)
⚠ F901	22144332	Fuse, T 3.15A/125V (TA, TC)
N901	22113528	Lamp, 14V, 80mA
⚠ E001	22176286	Cord, Power (TE)
⚠ E001	22176536	Cord, Power (TU)
⚠ E001	22176588	Cord, Power (AY)
⚠ E001	22176593	Cord, Power (TA, TC)
	22165047	Holder, Fuse (TE, TU, AY)
	22165036	Holder, Fuse (TA, TC)
J901	Refer to CAUTION on page10 .	

CAPACITORS

D = ±0.5pF, J = ±5%, K = ±10%, M = ±20%, Z = −20 +80%

ABBREVIATIONS: CD = Ceramic Disk, EL = Electrolytic, MY = Mylar, BL = Barrier Layer

C101	22488109	EL, 1mfd, 50V, M
C102, 103	22343102	CD, 1000pF, 50V, M
104, 105		
106, 107		
C201	22488100	EL, 10mfd, 50V, M
C301, 302	22467479	EL, 4.7mfd, 35V
C303, 304	22362470	CD, 47pF, 50V, K
C305, 306	22488100	EL, 47mfd, 10V, M
C307, 308	22360534	BL, 1500pF, 25V, K
C309, 310	22360540	BL, 4700pF, 25V, K
C311, 312	22349471	CD, 470pF, 50V, K
C313, 314	22488479	EL, 4.7mfd, 50V, M
315, 316		
317, 318		
319, 320		
321, 322		
C323	22342223	CD, 0.022mfd, 50V, Z
C401, 402	22488109	EL, 1mfd, 50V, M
C403	22362470	CD, 47pF, 50V, K
C404	22488109	EL, 1mfd, 50V, M
C405	22349681	CD, 680pF, 50V, K
C406	22361100	CD, 10pF, 50V, D
C407, 408	22488228	EL, 0.22mfd, 50V, M
C410	22349681	CD, 680pF, 50V, K
C413	22343102	CD, 1000pF, 50V, M
C414	22342103	CD, 0.01mfd, 50V, Z
C415, 417	22488479	EL, 4.7mfd, 50V, M
418, 419		
420		
C421, 422	22360546	BL, 0.015mfd, 25V, K
C423	22485221	EL, 220mfd, 16V, M
C424	22488478	EL, 0.47mfd, 50V, M
C425, 426	22342103	CD, 0.01mfd, 50V, Z
C427	22488228	EL, 0.22mfd, 50V, M
C428	22483101	EL, 100mfd, 10V, M
C429	22488478	EL, 0.47mfd, 50V, M
C430	22488100	EL, 10mfd, 50V, M
C431, 432	22488479	EL, 4.7mfd, 50V, M
433, 434		
C601, 602	22488479	EL, 4.7mfd, 50V, M
603, 604		
C605, 606	22362820	CD, 82pF, 50V, K
C607, 608	22371153	MY, 0.015mfd, 50V, J
C609, 610	22371683	MY, 0.068mfd, 50V, J
C611, 612	22371272	MY, 2700pF, 50V, J
C613, 614	22371223	MY, 0.022mfd, 50V, J
C615, 616	22362680	CD, 68pF, 50V, K
C617, 618	22488100	EL, 10mfd, 50V, M
619, 620		
C621, 622	22349331	CD, 330pF, 50V, K
C623, 624	22361509	CD, 5pF, 50V, D
C625, 626	22362470	CD, 47pF, 50V, K
C627, 628	22342103	CD, 0.01mfd, 50V, Z
C629, 630	22362101	CD, 100pF, 50V, K
631, 632		
633, 634		
635, 636		
C637, 638	22361100	CD, 10pF, 50V, D
C639, 640	22372104	MY, 0.1mfd, 50V, K

Symbol No.	Part No.	Description
C701, 702	22360552	BL, 0.047mfd, 25V, K
C703, 704	22360540	BL, 4700pF, 25V, K
C705	22488108	EL, 0.1mfd, 50V, M
C706	22488470	EL, 47mfd, 50V, M
⚠ C901	22340150	CD, 0.047mfd, AC400V (TE, TU, AY)
⚠ C901	22340140	CD, 0.01mfd, AC125V (TA, TC)
⚠ C902	22340148	CD, 0.01mfd x 2, AC500V
⚠ C903, 904	22440371	EL, 10000mfd, 50V
C905, 906	22487471	EL, 470mfd, 35V, M
C907	22486470	EL, 47mfd, 25V, M
C908	22487221	EL, 220mfd, 35V, M
C910	22488100	EL, 10mfd, 50V, M
C912	22486470	EL, 47mfd, 25V, M
C913, 914	22488479	EL, 4.7mfd, 50V, M

RESISTORS

All resistors are carbon film, 1/4W, ±5%, unless otherwise noted. K = 1000, M = 1000000

R101	22545105	1M ohm
R102, 103	22555104	100k ohm
104, 105		
106, 107		
R108, 109	22545225	2.2M ohm
110, 111		
R112, 113	22545821	820 ohm
R114, 115	22555103	10k ohm
116, 118		
119		
R123, 124	22545821	820 ohm
125		
R127, 128	22555122	1.2k ohm
129, 131		
132		
R201, 202	22555474	470k ohm
203, 204		
205, 206		
207, 208		
209, 210		
211, 212		
213, 214		
⚠ R215	22500122	10 ohm, Fusible
R217, 218	22555474	470k ohm
R219, 220	22555103	10k ohm
R301, 302	22555104	100k ohm
R303, 304	22555561	560 ohm
R305, 306	22555104	100k ohm
R307, 308	22555152	1.5k ohm

Symbol No.	Part No.	Description
R309, 310	22555473	47k ohm
R311, 312	22555564	560k ohm
R313, 314	22545561	560 ohm
R401	22627018	50k ohm, B, Variable
R402	22545561	560 ohm
R403	22555104	100k ohm
R404	22555101	100 ohm
R405	22555224	220k ohm
R406	22555104	100k ohm
R408	22555104	100k ohm
R411, 412	22545221	220 ohm
R414	22545153	15k ohm
R415	22555223	22k ohm
R416	22555103	10k ohm
R417	22555224	220k ohm
R418	22555222	2.2k ohm
R419, 420	22555680	68 ohm
R421, 422	22555473	47k ohm
R423, 424	22555472	4.7k ohm
R425, 426	22555561	560 ohm
R427	22545223	22k ohm
R428	22555223	22k ohm
R429, 430	22555393	39k ohm
R431, 432	22555472	4.7k ohm
433, 434		
R435	22545183	18k ohm
R436	22555183	18k ohm
R437	22627015	250k ohm, B, Variable
R438	22651493	100k ohm, B, Variable
R439	22555273	27k ohm
R440	22555153	15k ohm
R441	22555104	100k ohm
R442	22555471	470 ohm
R443, 444	22547681	680 ohm, 1/2W
R445	22545153	15k ohm
R446	22555153	15k ohm
R447	22555103	10k ohm
R448	22555822	8.2k ohm
R445, 456	22545563	56k ohm
R457	22555122	1.2k ohm
R458	22545182	1.8k ohm
R459	22545122	1.2k ohm
R460	22545182	1.8k ohm
R461, 462	22555103	10k ohm
R463	22555333	33k ohm
R465	22555473	47k ohm
R466	22555563	56k ohm
⚠ R467	22500120	560 ohm, Fusible
R468	22555563	56k ohm
R469	22555333	33k ohm
R470	22555224	220k ohm
R471	22555183	18k ohm
R472	22545183	18k ohm

Symbol No.	Part No.	Description
R473	22555333	33k ohm
R601, 602	22555394	390k ohm
R603, 604	22555392	3.9k ohm
605, 606		
R607, 608	22555183	18k ohm
R609, 610	22555474	470k ohm
R611	22555471	470 ohm
R612	22545471	470 ohm
R613, 614	22555681	680 ohm
R615, 616	22555223	22k ohm
R617, 618	22555472	4.7k ohm
R619, 620	22555561	560 ohm
R621, 622	22555152	1.5k ohm
R623, 624	22620017	100k ohm, C, Variable
R625, 626	22555222	2.2k ohm
R627, 628	22555103	10k ohm
R629, 630	22555271	270 ohm
R631, 632	22555392	3.9k ohm
633, 634		
R635, 636	22555183	18k ohm
R637, 638	22545105	1M ohm
⚠ R639, 640	22500292	150 ohm, Fusible
R641, 642	22555681	680 ohm
R643, 644	22555103	10k ohm
R645, 646	22555221	220 ohm
R647, 648	22658500	300 ohm, B, Semi-fixed Variable
R649, 650	22547103	10k ohm, 1/2W
R651, 652	22555221	220 ohm
653, 654		
⚠ R655, 656	22500289	82 ohm, Fusible
657, 658		
⚠ R659, 660	22500150	68 ohm, Fusible
661, 662		
⚠ R663, 664	22500273	3.3 ohm, Fusible
665, 666		
⚠ R667, 668	22500187	0.47 ohm, 5W, Wire Wound
669, 670		
⚠ R671, 672	22570250	10 ohm, 1W, Metal Oxide Film
⚠ R673, 674	22570311	220 ohm, 2W, Metal Oxided Film
R675, 676	22555103	10k ohm
R701, 702	22545273	27k ohm
R703	22555222	2.2k ohm
R704, 705	22658279	1k ohm, Semi-fixed Variable
R706	22555222	2.2k ohm
R707, 708	22555822	8.2k ohm
R709, 710	22555224	220k ohm
R711, 712	22555152	1.5k ohm
713, 714		
715, 716		
717, 718		
719, 720		
721, 722		
723, 724		
725, 726		
727, 728		
729, 730		
731, 732		
R733, 734	22555103	10k ohm
R735, 736	22555682	6.8k ohm
R737, 738	22555681	680 ohm
⚠ R739	22570276	1.5k ohm, 1W, Metal Oxided Film
⚠ R901	22500130	10 ohm, Fusible
R902, 903	22555103	10k ohm
⚠ R904	22570313	330 ohm, 2W, Metal Oxided Film
⚠ R905	22570271	560 ohm, 1W, Metal Oxided Film
⚠ R906	22570277	1.8k ohm, 1W, Metal Oxided Film
⚠ R907	22500272	2.2 ohm, Fusible
R908	22545102	1k ohm
R909	22545222	2.2k ohm
R910	22545683	68k ohm
⚠ R911	22500286	47 ohm, Fusible
⚠ R912	22570272	680 ohm, 1W, Metal Oxided Film
⚠ R913	22500291	120 ohm, Fusible
⚠ R914	22500295	270 ohm, Fusible

ACCESSORIES

	22902789	Owner's Manual (TE, TU, AY)
	22902788	Owner's Manual (TA)
	22902855	Owner's Manual (TC)